Data Analyst

The Data Analyst plays a central role in the automotive industry by transforming complex data into meaningful insights that inform operational, strategic, and technological decisions. Their primary tasks include collecting, cleaning, processing, and interpreting large data sets using statistical methods, programming, and data visualisation tools. Data Analysts are responsible for ensuring the quality and integrity of data, designing data models, and providing visual and narrative reports tailored to different stakeholders.

Key responsibilities involve applying analytical techniques to support production, logistics, customer service, and innovation processes. The role requires strong digital skills (e.g. big data tools, query languages, cloud-based data management), transversal skills (e.g. critical thinking, data-driven decision-making), and sector-specific competences (e.g. business analytics, predictive modelling).

Within the automotive sector, Data Analysts contribute directly to Digitalisation trends by enabling smart factory environments, predictive maintenance, and customer analytics. They support the Resilience of Value Chains by anticipating supply chain disruptions and process inefficiencies, and enhance Sustainability by monitoring environmental metrics through integrated dashboards. Their capacity to extract actionable knowledge from data is fundamental for the development of agile, efficient, and sustainable business models.

ESCO Mapping

https://esco.ec.europa.eu/select-language?destination=/node/1

ID	NAME	Concept URI
2511.3	Data analyst	http://data.europa.eu/esco/occupation/d3edb8f8-3a06-47a0-8fb9-9b212c006aa2

Context

EQF Level	5/6

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Departments	Intellectual, Legal IT & Digital

Green Competences

ID	Name	Type	Description	Level	ESCO
C034	Analyse environmental data	Skill	Apply analytical tools and techniques to evaluate environmental indicators and support sustainable practices. ▪ Analyse emissions and energy consumption data from manufacturing processes ▪ Interpret sustainability KPIs to support environmental compliance ▪ Develop dashboards to track waste, resource use, and carbon footprint ▪ Identify environmental inefficiencies and propose corrective actions ▪ Collaborate with ESG teams to report green metrics	2	

Digital Competences

ID	Name	Type	Description	Level	ESCO
C066	Statistical modelling	Knowledge	Understand the use of mathematical models to interpret data and forecast outcomes. ▪ Describe types of models used in data science (e.g. linear, logistic, time-series) ▪ Understand assumptions underlying statistical models ▪ Recognise appropriate use cases for different models Explain how model outputs support decision-making	2	Link
C075	Make data-driven decisions	Skill	Use structured data and performance indicators to inform decisions and actions. ▪ Collect and interpret business KPIs ▪ Recommend strategies based on analytical findings ▪ Justify decisions with data-backed evidence	3	Link

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ID	Name	Type	Description	Level	ESCO
			Communicate insights clearly to support operational choices		
C105	Wrangle data	Skill	Perform technical operations to clean, transform, and restructure raw data for analysis and visualisation. ▪ Use scripting languages (e.g. Python, R) to clean and preprocess datasets ▪ Resolve inconsistencies and structure raw data formats ▪ Automate repetitive data cleaning tasks ▪ Integrate multiple sources into structured datasets ▪ Validate outputs against data quality rules	2	Link
C106	Program statistical models	Skill	Use programming languages and statistical tools to analyse data, create models, and generate insights. ▪ Write scripts in R or Python for statistical analysis and visualisation ▪ Apply statistical tests to validate data patterns and hypotheses ▪ Use libraries (e.g. pandas, NumPy, SciPy) to handle data computation tasks ▪ Build custom functions for recurring analysis procedures	3	Link
C107	Visualise data	Skill	Create visual representations of data to communicate findings clearly and effectively. ▪ Design interactive dashboards using tools like Power BI or Tableau ▪ Choose appropriate visual formats (charts, heatmaps, graphs) for different types of data ▪ Tailor visual outputs to the needs of stakeholders ▪ Apply visual design principles to ensure clarity and readability	2	Link
C108	Query databases	Skill	Extract and manipulate data using structured query languages in relational databases. ▪ Write SQL queries to retrieve specific information from data tables ▪ Optimise queries for performance and efficiency	2	Link

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ID	Name	Type	Description	Level	ESCO
			▪ Join and filter datasets using advanced query logic ▪ Validate and clean data within database environments		
C109	Cloud-based data management	Knowledge	Understand cloud technologies and platforms used to store, manage, and process data. ▪ Describe features of cloud platforms (e.g. AWS, Azure, Google Cloud) for data storage and analytics ▪ Explain advantages of distributed cloud-based processing ▪ Differentiate between cloud services (IaaS, PaaS, SaaS) in data environments ▪ Recognise security and compliance considerations in cloud systems	2	Link
C110	Apply predictive analytics	Skill	Use statistical models and machine learning techniques to forecast future outcomes based on data. ▪ Apply regression, classification or clustering models to business problems ▪ Use tools such as scikit-learn, TensorFlow, or similar libraries ▪ Evaluate model accuracy and performance metrics ▪ Interpret predictive insights for business decision-making	3	Link
C111	Model data	Skill	Use techniques and tools to design conceptual, logical, and physical data models aligned with business requirements. ▪ Create data models (e.g. ER diagrams) based on user or process requirements ▪ Apply methodologies (e.g. star schema, snowflake) for analytical databases ▪ Collaborate with stakeholders to translate business processes into data structures ▪ Ensure models support efficient storage, retrieval, and reporting	2	Link

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Soft Skills

ID	Name	Type	Description	Level	ESCO
C157	Communicate insights	Skill	Express complex ideas clearly and adapt communication styles to different audiences. ▪ Present data insights to technical and non-technical stakeholders ▪ Translate statistical findings into actionable business language ▪ Use storytelling to convey trends and implications ▪ Tailor presentations to audience needs and context	2	Link
C129	Solve problems	Skill	Identify, analyse, and resolve issues using structured and creative approaches. ▪ Break down complex data problems into manageable components ▪ Apply structured thinking to select suitable analytical methods ▪ Propose data-driven solutions to operational challenges ▪ Iterate and refine models or processes based on feedback	3	Link
C123	Collaborate in teams	Skill	Work effectively within interdisciplinary and cross-functional teams to achieve common goals. ▪ Align data initiatives with team and organisational priorities ▪ Share analytical findings in collaborative environments ▪ Support engineering, production or sales teams with relevant data insights ▪ Contribute constructively in agile or project-based teams	2	Link
C134	Manage time effectively	Skill	Organise tasks effectively to meet deadlines and handle multiple priorities. ▪ Plan data collection and reporting tasks according to project timelines ▪ Prioritise analysis tasks based on urgency and impact ▪ Allocate time efficiently between exploratory and operational work ▪ Adjust schedules when facing unexpected delays or rework	2	Link

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Transversal Competences

ID	Name	Type	Description	Level	ESCO
C165	Apply critical thinking	Skill	Analyse facts objectively and evaluate arguments to support sound and unbiased conclusions. ▪ Assess the reliability and relevance of data sources ▪ Evaluate assumptions and interpret analytical results with a critical perspective ▪ Detect logical inconsistencies in data patterns and reports Challenge hypotheses and propose alternative interpretations	3	Link
C199	Analyse big data	Skill	Evaluate and interpret large-scale datasets to identify trends, correlations, and insights. ▪ Collect and preprocess large data sets for exploratory analysis ▪ Apply big data tools to detect patterns in complex datasets ▪ Use statistical techniques to analyse high-volume structured and unstructured data ▪ Extract actionable insights from diverse data sources	2	Link
C200	Perform statistical analysis	Skill	Apply statistical methods and tools to analyse data and forecast trends. ▪ Use descriptive and inferential statistics to explore datasets ▪ Apply models such as regression, classification or clustering ▪ Interpret statistical outputs to support business decisions ▪ Use software tools (e.g. R, Python, SPSS) for analysis	3	Link
C201	Define data quality criteria	Skill	Define standards for assessing the completeness, accuracy, and usability of data. ▪ Specify quality thresholds for datasets based on business needs	2	Link

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ID	Name	Type	Description	Level	ESCO
			▪ Identify inconsistencies, duplications, and missing data ▪ Collaborate with data stewards to validate data inputs ▪ Monitor and document data quality metrics		
C202	Design data processes	Skill	Design structured workflows for data transformation using mathematical, algorithmic or rule-based approaches. ▪ Design high-level workflows to automate data preparation ▪ Define logic and steps for data transformation pipelines ▪ Integrate data sources conceptually into processing streams ▪ Align process design with business and analytics objectives	2	Link
C203	Apply mathematical reasoning	Skill	Use mathematical calculations and logical frameworks to analyse problems and support decision-making. ▪ Apply formulas and numeric methods to support data analysis ▪ Perform calculations using spreadsheets or coding tools ▪ Interpret mathematical outputs in business context ▪ Use numerical reasoning to validate hypotheses	2	Link
C204	Statistical foundations	Knowledge	Understand the principles and practices of data collection, analysis, and presentation. ▪ Describe statistical methods such as sampling, hypothesis testing and data visualisation ▪ Explain how surveys and experiments are designed ▪ Identify sources of bias in data collection ▪ Understand frequency distributions and probability	2	Link
C205	Data ethics	Knowledge	Understand ethical considerations related to data collection, analysis, and use. ▪ Describe risks of data misuse or manipulation	2	Link

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ID	Name	Type	Description	Level	ESCO
			▪ Identify ethical issues in personal or sensitive data processing ▪ Understand the impact of bias in algorithms ▪ Explain principles of transparency and fairness in data practices		
C206	Multidisciplinary research	Knowledge	Understand how to integrate knowledge from different disciplines to address complex problems. ▪ Describe the value of cross-disciplinary approaches to innovation ▪ Identify relevant perspectives from engineering, economics, and social sciences ▪ Contribute to holistic analysis of industry challenges ▪ Apply systems thinking in automotive context	2	Link
C207	Research design *(Context-specific: R&D roles)*	Knowledge	Understand methodologies for conducting structured and valid research studies. ▪ Explain steps in designing a research project ▪ Identify appropriate methods for data collection and analysis ▪ Describe how to frame research questions and hypotheses ▪ Recognise limitations and validity factors in research design	2	Link

Sector Specific

ID	Name	Type	Description	Level	ESCO
C276	Business analytics	Knowledge	Understand the use of statistical and quantitative methods to solve business problems. ▪ Describe how data analysis supports strategic decision-making ▪ Identify relevant business metrics and performance indicators ▪ Recognise how models can optimise operations and reduce costs	2	Link

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ID	Name	Type	Description	Level	ESCO
			▪ Understand the role of forecasting in business planning		
C277	Business intelligence	Knowledge	Understand the tools and processes used to convert raw data into actionable business information. ▪ Explain how dashboards and reports communicate KPIs ▪ Identify common BI tools used in the automotive industry ▪ Understand how data warehouses support BI systems ▪ Describe how BI helps monitor supply chain and production efficiency	2	Link
C278	Data science	Knowledge	Understand the combination of AI, statistics, and computing used to extract insights from large datasets. ▪ Define key data science techniques (e.g. machine learning, classification, clustering) ▪ Explain the role of algorithms in pattern recognition ▪ Describe applications of data science in predictive maintenance and customer analytics ▪ Understand the lifecycle of a data science project	2	Link

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